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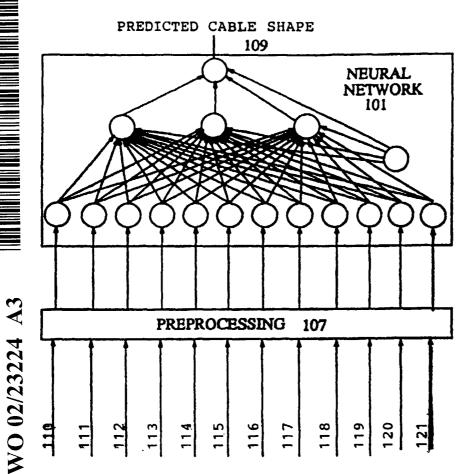(30) Priority Data:
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(54) Title: NEURAL NET PREDICTION OF SEISMIC STREAMER SHAPE

(57) Abstract: A neural network to predict seismic streamer shape during seismic operations having an input layer, an optional hidden layer, and an output layer, each layer having one or more nodes. Each connection between nodes has an associated weight and a training process for determining the weights for each of the connections of the neural network. The trained neural network is responsive to the inputs and outputs to generate a predicted cable shape. The training process applies a plurality of training sets to the neural network. Each training set comprises a set of inputs and a desired cable shape. With each training data set, the training process determines the difference between the cable shape predicted by the neural network and the desired or known cable shape. The training process then adjusts the weights of the neural network nodes based on the difference between the output predicted cable shape and the desired cable shape.

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   G01V1/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   G01V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KRAIL P.M., BRYSK H.: "The shape of a marine streamer in a cross current" GEOPHYSICS, vol. 54, no. 3, 1989, pages 302-308, XP002192763 page 304, column 2 -page 306, column 1 ---	1,2,4,5
Y	WO 99 35460 A (RAYTHEON CO) 15 July 1999 (1999-07-15) page 1, line 4 - line 6 page 3, line 19 - line 30 page 7, line 11 - line 17	1,2,4,5
A	---	2,7
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

'A' document defining the general state of the art which is not considered to be of particular relevance

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'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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'&' document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 March 2002	26/03/2002

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	OOI T ET AL: "Dynamic control of ROVs making use of the neural network concept" PROCEEDINGS OF THE INTERNATIONAL OFFSHORE AND POLAR ENGINEERING CONFERENCE, XX, XX, vol. 2, 10 April 1994 (1994-04-10), pages 374-381, XP000983012 page 374, column 1, paragraph 1 page 374, column 2, paragraph 3 page 375, column 1, paragraph 7 -page 376, column 2, paragraph 2 ---	1-3
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